

Notice of Allowability

Application No.

10/616,606

Examiner

Chih-Cheng Glen Kao

Applicant(s)

SCHROEDER ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the Amendment filed on December 3, 2007.
2. ☒ The allowed claim(s) is/are 1-9, 12-16, 18-24, 40-42 and 44-59.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

2. The application has been amended as follows:

In claim 13, line 1, change the claim status from "previously presented" to --currently amended--.

In claim 40, line 1, change the claim status from "previously presented" to --currently amended--.

In claim 41, line 1, change the claim status from "previously presented" to --currently amended--.

Reasons for Allowance

3. Claims 1-9, 12-16, 18-24, 40-42, and 44-59 are allowed. The following is an examiner's statement of reasons for allowance.

4. Regarding claim 1, the prior art fails to disclose or fairly suggest a process for determining an actual position of an object to be examined in a coordinate system, including wherein using a determination of step c), the object to be examined is positioned in such a way that a target position of a structure comes to lie within a volume detected by a CT scanner,

further characterized in that, by using the CT scanner, a three-dimensional digital CT image of a tolerance volume, including the structure, is created and stored as a CT data record, and the actual position of the structure is determined in a CT coordinate system on the basis of the CT data record, in combination with all of the other limitations in the claim. Claims 3-7, 9, 23, 24, 46, 47, 49, 55, and 56 are allowed by virtue of their dependency.

5. Regarding claim 2, the prior art fails to disclose or fairly suggest a process for determining an actual position of an object to be examined in a coordinate system, including wherein using a determination of step c), the object to be examined is positioned in such a way that a target position of a structure comes to lie within an area that is detectable by a coordinate measuring instrument, further characterized in that, in addition to the actual position of the structure, a shape of the structure is also determined on the basis of a CT image or a CT data record, in combination with all of the other limitations in the claim. Claims 8, 9, 23, and 24 are allowed by virtue of their dependency.

6. Regarding claim 12, the prior art fails to disclose or fairly suggest a process for determining an actual position of an object to be examined in a coordinate system, including wherein using a determination of step c), the object to be examined is positioned in such a way that a target position of a structure comes to lie within an area that is detectable by a coordinate measuring instrument, further characterized in that, by using a CT scanner, a three-dimensional digital CT image of a tolerance volume, including the structure, is created and stored as a CT

data record, and the actual position of the structure is determined in a CT coordinate system on the basis of the CT data record, in combination with all of the other limitations in the claim.

7. Regarding claim 13, the prior art fails to disclose or fairly suggest a process for determining an actual position of an object to be examined in a coordinate system, including wherein the object to be examined is positioned relative to a coordinate measuring instrument by means of a traveling mechanism, using a target position of a structure obtained by means of step (iii) with respect to an MI coordinate system, in such a way that a tolerance volume and thus also a structure lie within an area that is detectable by the coordinate measuring instrument, and using the coordinate measuring instrument, a three-dimensional digital image of a tolerance area, including the structure, is created and stored as an MI data record, and the actual position of the structure is determined in the MI coordinate system on the basis of the MI data record, in combination with all of the other limitations in the claim.

8. Regarding claim 14, the prior art fails to disclose or fairly suggest a process for determining an actual position of an object to be examined in a coordinate system, including wherein a relative position of the object to be examined is regulated with respect to a CT scanner by means of a traveling mechanism, using a target position of a structure obtained by means of step c) relative to a CT coordinate system, in such a way that a tolerance volume and thus also the structure lie within a volume that is detectable by the CT scanner, by means of the CT scanner, a three-dimensional digital CT image of the tolerance volume, including the structure, is created and stored as a CT data record, and the actual position of the structure is determined in

the CT coordinate system on the basis of the CT data record, in combination with all of the other limitations in the claim. Claims 15, 16, and 18 are allowed by virtue of their dependency.

9. Regarding claim 19, the prior art fails to disclose or fairly suggest a process for determining an actual position of an object to be examined in a coordinate system, including wherein using a determination of step c), the object to be examined is positioned in such a way that a target position of a structure comes to lie within a volume detected by the CT scanner, further characterized in that, in addition to the actual position of the structure, a shape of the structure is also determined on the basis of a CT image or a CT data record, in combination with all of the other limitations in the claim. Claims 45, 48, and 50-54 are allowed by virtue of their dependency.

10. Regarding claim 20, the prior art fails to disclose or fairly suggest a process for determining an actual position of an object to be examined in a coordinate system, including wherein using a determination of step c), the object to be examined is positioned in such a way that a target position of a structure comes to lie within an area that is detectable by a coordinate measuring instrument, further characterized in that the shape of the structure is determined on the basis of a CT image or a CT data record, in combination with all of the other limitations in the claim. Claims 57-59 are allowed by virtue of their dependency.

11. Regarding claim 21, the prior art fails to disclose or fairly suggest a process for determining an actual position of an object to be examined in a coordinate system, including

wherein using a determination of step c), the object to be examined is positioned in such a way that a target position of a structure comes to lie within an area that is detectable by a coordinate measuring instrument, further characterized in that a position of at least three selected space points of a calibration object is determined with a CT scanner in a CT coordinate system as well as with the coordinate measuring instrument in an MI coordinate system, and a comparison of results obtained allows to determine a relative location and a relative orientation of the CT coordinate system relative to the MI coordinate system, in combination with all of the other limitations in the claim. Claim 22 is allowed by virtue of its dependency.

12. Regarding claim 40, the prior art fails to disclose or fairly suggest a process for determining an actual position of an object to be examined in a coordinate system, including wherein using a determination of step c), the object to be examined is positioned in such a way that a target position of a structure comes to lie within a volume detected by a CT scanner, further characterized in that the shape of the structure is determined on the basis of a CT image or a CT data record, in combination with all of the other limitations in the claim. Claim 44 is allowed by virtue of its dependency.

13. Regarding claim 41, the prior art fails to disclose or fairly suggest a process for determining an actual position of an object to be examined in a coordinate system, including wherein using a determination of step c), the object to be examined is positioned in such a way that a target position of a structure comes to lie within a volume detected by a CT scanner, further characterized in that a position of at least three selected space points of a calibration

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object is determined with the CT scanner in a CT coordinate system as well as with a coordinate measuring instrument in an MI coordinate system, and a comparison of results obtained allows to determine a relative location and a relative orientation of the CT coordinate system relative to the MI coordinate system, in combination with all of the other limitations in the claim. Claim 42 is allowed by virtue of its dependency.

14. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Cheng Glen Kao whose telephone number is (571) 272-2492. The examiner can normally be reached on M - F (9 am to 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Chih-Cheng Glen Kao
Primary Examiner
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